

**WHAT IS CLAIMED IS:**

1. A thermally energy efficient vehicle comprising:

a vehicle structure, wherein said vehicle  
5 structure includes generally interconnected  
structural members that form a frame for the vehicle  
and generally planar interconnected panels that  
define a shape of the vehicle;

a low transmittance glass window positioned  
10 within the vehicle structure, wherein said low  
transmittance glass window increases a thermal  
resistance of the vehicle; and

an energy efficient thermal management  
system providing exterior thermal management and  
15 interior thermal management for the vehicle, wherein  
said energy efficient thermal management system  
consumes less thermal energy as a result of the  
increased thermal resistance of the vehicle.

20 2. A thermally energy efficient vehicle as  
set forth in claim 1 wherein a thermally efficient  
structural material is utilized for a structural  
member, to reduce a thermal mass of said structural  
member.

3. A thermally energy efficient vehicle as set forth in claim 1 wherein an energy efficient insulator is attached to a portion of said vehicle structure to increase a thermal resistance of the  
5 vehicle.

4. A thermally energy efficient vehicle as set forth in claim 3 wherein said energy efficient insulator provides a thermal barrier and an acoustic  
10 barrier.

5. A thermally energy efficient vehicle as set forth in claim 3 wherein said energy efficient insulator is a gas-filled panel.  
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6. A thermally energy efficient vehicle as set forth in claim 1 wherein said low transmittance glass window includes two parallel sheets of glass separated by an air gap, to improve a thermal  
20 resistance of the low transmittance glass.

7. A thermally energy efficient vehicle as set forth in claim 6 wherein said low transmittance glass includes a solar reflective film attached to an  
25 outside surface of one of the two parallel sheets of glass.

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8. A thermally energy efficient vehicle as set forth in claim 6 wherein said low transmittance glass includes a desiccant material disposed within  
5 the air gap between the two parallel sheets of glass.

9. A thermally energy efficient vehicle as set forth in claim 6 wherein the two parallel sheets of glass are made from a glass/polycarbonate  
10 composite material.

10. A thermally energy efficient vehicle as set forth in claim 1 wherein a thermal energy consumption capacity of the energy efficient thermal  
15 management system is reduced by increasing the thermal resistance of the vehicle.

11. A thermally energy efficient vehicle comprising:

20 a vehicle structure, wherein said vehicle structure includes generally interconnected structural members that form a frame for the vehicle and generally planar interconnected panels that define a shape of the vehicle, wherein a thermally  
25 efficient structural material is utilized for a

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structural member, to reduce a thermal mass of the vehicle;

a low transmittance glass window positioned within the vehicle structure, wherein said low  
5 transmittance glass window includes two parallel sheets of glass separated by an air gap, to increase a thermal resistance of the vehicle; and

an energy efficient thermal management system providing exterior thermal management and  
10 interior thermal management for the vehicle, wherein a thermal energy consumption capacity of said energy efficient thermal management system is decreased since said energy efficient thermal management system consumes less thermal energy resulting from the  
15 increased thermal resistance and reduced thermal mass of the vehicle.

12. A thermally energy efficient vehicle as set forth in claim 11 wherein an energy efficient  
20 insulator is attached to a portion of said vehicle structure to increase a thermal resistance of the vehicle.

13. A thermally energy efficient vehicle  
25 as set forth in claim 12 wherein said energy

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efficient insulator provides a thermal barrier and an acoustic barrier.

14. A thermally energy efficient vehicle  
5 as set forth in claim 13 wherein said energy  
efficient insulator is a gas-filled panel.

15. A thermally energy efficient vehicle  
as set forth in claim 11 wherein said low  
10 transmittance glass includes a solar reflective film  
attached to an outside surface of one of the two  
parallel sheets of glass.

16. A thermally energy efficient vehicle  
15 as set forth in claim 11 wherein said low  
transmittance glass includes a desiccant material  
disposed within the air gap between the two parallel  
sheets of glass.

20 17. A thermally energy efficient vehicle  
as set forth in claim 11 wherein the two parallel  
sheets of glass are made from a glass/polycarbonate  
composite material.

25 18. A thermally energy efficient vehicle  
comprising:

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a vehicle structure, wherein said vehicle structure includes generally interconnected structural members that form a frame for the vehicle and generally planar interconnected panels that  
5 define a shape of the vehicle, wherein a thermally efficient structural material is utilized for a structural member, to reduce a thermal mass of the vehicle;

an energy efficient insulator attached to a  
10 portion of said vehicle structure to increase a thermal resistance of the vehicle

a low transmittance glass window positioned within the vehicle structure, wherein said low transmittance glass window includes two parallel  
15 sheets of glass separated by an air gap, to increase the thermal resistance of the vehicle; and

an energy efficient thermal management system providing exterior thermal management and interior thermal management for the vehicle, wherein  
20 a thermal energy consumption capacity of said energy efficient thermal management system is decreased since said energy efficient thermal management system consumes less thermal energy resulting from the increased thermal resistance and reduced thermal mass  
25 of the vehicle.

19. A thermally energy efficient vehicle as set forth in claim 18 wherein said energy efficient insulator provides a thermal barrier and an acoustic barrier.

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20. A thermally energy efficient vehicle as set forth in claim 18 wherein said energy efficient insulator is a gas-filled panel.

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	